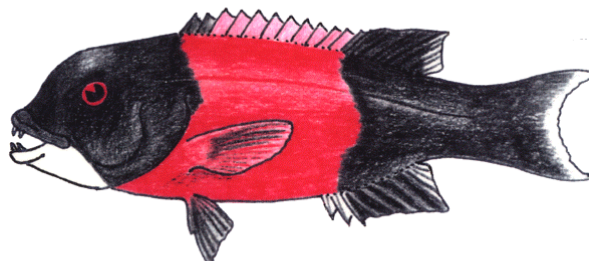


California Sheephead, *Semicossyphus pulcher*

1993-1999 Commercial Catch by Ports & Blocks



Marine Fishery Profiles

Volume 1: Nearshore

Marine Region GIS Lab

Nancy Wright	Eric Knaggs
Jamie Kum	Bob Leos
Chad King	Colleena Perez



California Department of Fish & Game
Marine Region

December 2000

Santa Barbara



Catch - 919,454 lbs.



Revenue - \$2,384,403



Effort - 225 lbs./trip



Port Cities



Catch by Pounds



Revenue



Effort - Pounds per Trip



10 Nautical Mile Port Buffers



California Sheephead - Adult Range
(0 - 85 Meters Depth)



California Sheephead - Juvenile Range
(0 - 30 Meters Depth)



50 Meter Contour Lines
out to 600 Meters Depth



1 Nautical Mile Coastline Buffer



40 Fathom Contour Line

Sheephead, 1993-1999
Commercial Market
Catch by Block (lbs.)

170,000 - 230,000

113,000 - 170,000

57,000 - 113,000

500 - 57,000

Sheephead, 1993-1998
CPFV Catch by Block
(Number of Fish Caught)

8,000 - 110,000

5,000 - 8,000

2,700 - 5,000

50 - 2,700

Map based on 1993-1999 PacFIN data (ports), 1993-1999 California Department of Fish & Game Commercial Landing Receipts (blocks), & 1993-1998 California Department of Fish & Game CPFV Logbook data (block centroids).

Port of Los Angeles



Catch - 353,338 lbs.

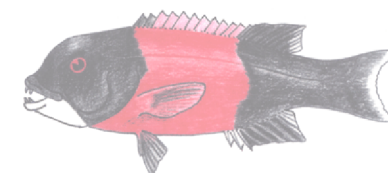


Revenue - \$1,020,832



Effort - 154 lbs./trip

Southern California



California Sheephead, *Semicossyphus pulcher*
1993-1999 Commercial Catch by Ports & by Block
California Department of Fish & Game

San Diego



Catch - 472,384 lbs.



Revenue - \$1,452,351



Effort - 222 lbs./trip

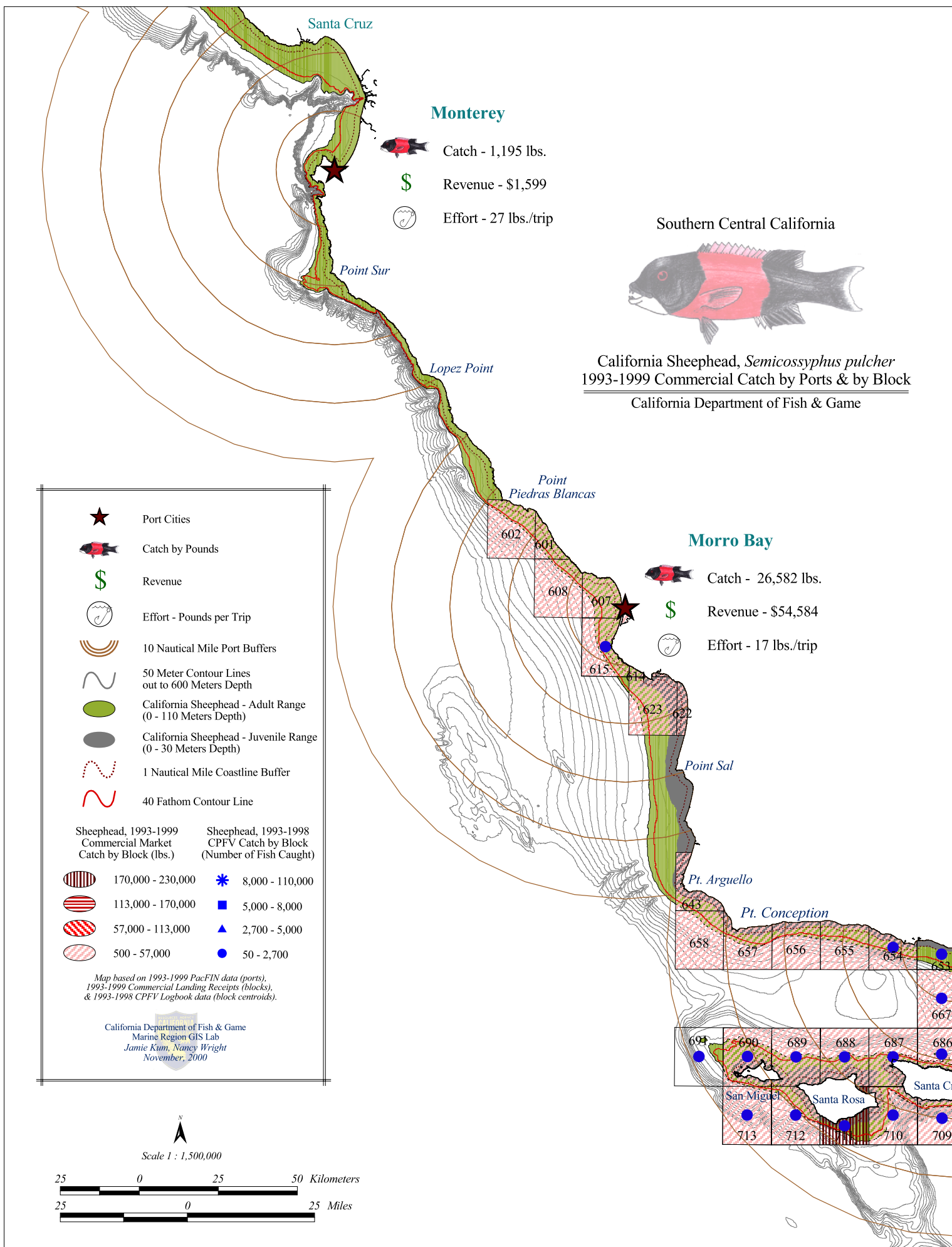
U.S. - Mexico Border

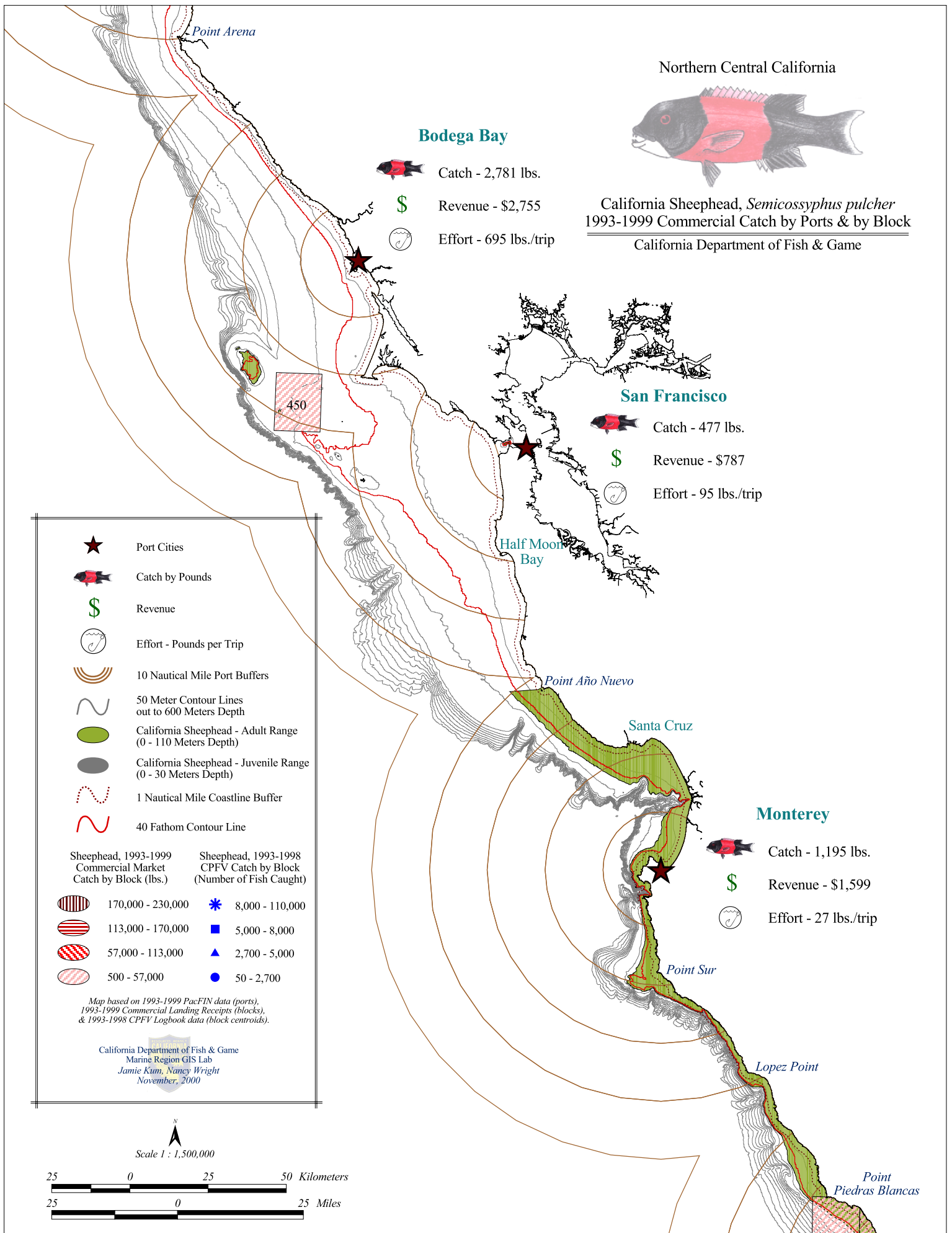
Scale 1 : 1,500,000

25 0 25 50 Kilometers

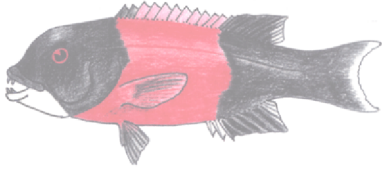
25 0 25 Miles

California Department of Fish & Game
Marine Region GIS Lab
Jamie Kum, Nancy Wright
November, 2000





Northern California



California Sheephead, *Semicossyphus pulcher* 1993-1999 Commercial Catch by Ports & by Block

California Department of Fish & Game

- ★ Port Cities
- Catch by Pounds
- \$ Revenue
- Effort - Pounds per Trip
- 10 Nautical Mile Port Buffers
- 50 Meter Contour Lines out to 600 Meters Depth
- California Sheephead - Adult Range (0 - 110 Meters Depth)
- California Sheephead - Juvenile Range (0 - 30 Meters Depth)
- 1 Nautical Mile Coastline Buffer
- 40 Fathom Contour Line

Sheephead, 1993-1999
Commercial Market
Catch by Block (lbs.)

- 170,000 - 230,000
- 113,000 - 170,000
- 57,000 - 113,000
- 500 - 57,000

Sheephead, 1993-1998
CPFV Catch by Block
(Number of Fish Caught)

- 8,000 - 110,000
- 5,000 - 8,000
- 2,700 - 5,000
- 50 - 2,700

Map based on 1993-1999 PacFIN data (ports),
1993-1999 Commercial Landing Receipts (blocks),
& 1993-1998 CPFV Logbook data (block centroids).

California Department of Fish & Game
Marine Region GIS Lab
Jamie Kum, Nancy Wright
November, 2000

Crescent City



Catch - 93 lbs.



Revenue - \$140



Effort - 93 lbs./trip

Eureka



Catch - 3,638 lbs.



Revenue - \$4,920



Effort - 1,819 lbs./trip

Cape Mendocino

Punta Gorda

Fort Bragg



Catch - 132 lbs.



Revenue - \$382



Effort - 66 lbs./trip

Point Arena



Scale 1 : 1,500,000

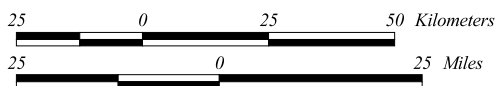


Figure 1. (refer to table 1) CDFG Commercial Receipts Data (1993 - 1999)
Total Pounds of California Sheephead Caught and Average Price per Pound by Month



Table 1. (refer to fig. 1) CDFG Commercial Receipts Data (1993 - 1999)
Total Pounds of California Sheephead Caught and Average Price per Pound by Month

1993
Table 1a

Month	Total Pounds	Price per Pound
Jan	21,266	\$2.51
Feb	12,878	\$2.44
Mar	26,692	\$2.85
Apr	11,594	\$3.07
May	26,466	\$2.72
Jun	32,024	\$2.51
Jul	39,992	\$2.52
Aug	34,089	\$2.56
Sep	31,460	\$2.24
Oct	26,227	\$2.63
Nov	28,797	\$2.58
Dec	22,665	\$2.74
Total	314,151	\$2.59

1997
Table 1e

Month	Total Pounds	Price per Pound
Jan	47,090	\$2.48
Feb	68,597	\$3.02
Mar	35,579	\$2.83
Apr	22,141	\$2.98
May	29,337	\$2.80
Jun	27,599	\$2.91
Jul	32,581	\$2.69
Aug	23,304	\$2.84
Sep	14,417	\$2.89
Oct	23,761	\$2.69
Nov	16,912	\$2.89
Dec	25,122	\$2.63
Total	366,440	\$2.80

1994
Table 1b

Month	Total Pounds	Price per Pound
Jan	24,693	\$2.81
Feb	24,748	\$2.71
Mar	33,981	\$2.82
Apr	18,371	\$2.78
May	26,402	\$2.92
Jun	21,679	\$3.16
Jul	27,312	\$2.99
Aug	21,078	\$2.78
Sep	15,176	\$2.92
Oct	12,057	\$2.70
Nov	11,367	\$2.80
Dec	22,234	\$3.20
Total	259,099	\$2.89

1998
Table 1f

Month	Total Pounds	Price per Pound
Jan	20,289	\$2.98
Feb	3,108	\$2.79
Mar	30,594	\$2.71
Apr	32,741	\$2.72
May	22,590	\$2.62
Jun	33,299	\$2.60
Jul	33,277	\$2.44
Aug	27,035	\$2.53
Sep	27,018	\$2.52
Oct	11,620	\$2.60
Nov	10,562	\$2.82
Dec	9,148	\$2.76
Total	261,281	\$2.64

1995
Table 1c

Month	Total Pounds	Price per Pound
Jan	9,387	\$2.73
Feb	36,565	\$2.87
Mar	20,347	\$2.96
Apr	20,854	\$2.72
May	25,307	\$2.77
Jun	18,491	\$3.28
Jul	19,642	\$3.09
Aug	27,542	\$2.76
Sep	16,276	\$2.56
Oct	19,443	\$2.29
Nov	20,071	\$2.36
Dec	19,904	\$2.69
Total	253,827	\$2.77

1999
Table 1g

Month	Total Pounds	Price per Pound
Jan	17,868	\$2.76
Feb	6,402	\$2.73
Mar	7,622	\$2.77
Apr	3,016	\$3.42
May	8,556	\$3.18
Jun	11,712	\$3.10
Jul	15,694	\$3.31
Aug	11,495	\$3.35
Sep	13,376	\$3.17
Oct	7,540	\$3.36
Nov	10,239	\$3.46
Dec	16,065	\$3.67
Total	129,585	\$3.20

1996
Table 1d

Month	Total Pounds	Price per Pound
Jan	18,512	\$2.86
Feb	23,989	\$2.87
Mar	34,454	\$2.81
Apr	12,505	\$2.78
May	21,543	\$2.72
Jun	24,040	\$2.85
Jul	21,032	\$2.61
Aug	19,326	\$3.13
Sep	15,033	\$2.57
Oct	12,503	\$2.68
Nov	21,252	\$2.74
Dec	28,078	\$2.44
Total	252,266	\$2.75

TOTAL
'93 - '99
Table 1h

Month	Total Pounds	Price per Pound
Jan	159,105	\$2.69
Feb	176,286	\$2.87
Mar	189,269	\$2.82
Apr	121,221	\$2.83
May	160,201	\$2.79
Jun	168,843	\$2.85
Jul	189,530	\$2.74
Aug	163,869	\$2.78
Sep	132,755	\$2.62
Oct	113,152	\$2.64
Nov	119,199	\$2.73
Dec	143,216	\$2.83
Total	1,836,649	\$2.77

Figure 2. (refer to table 2) Pacific Fisheries Information Network Data (1993 - 1999)
Total Pounds of California Sheephead Caught and Average Price per Pound by Month

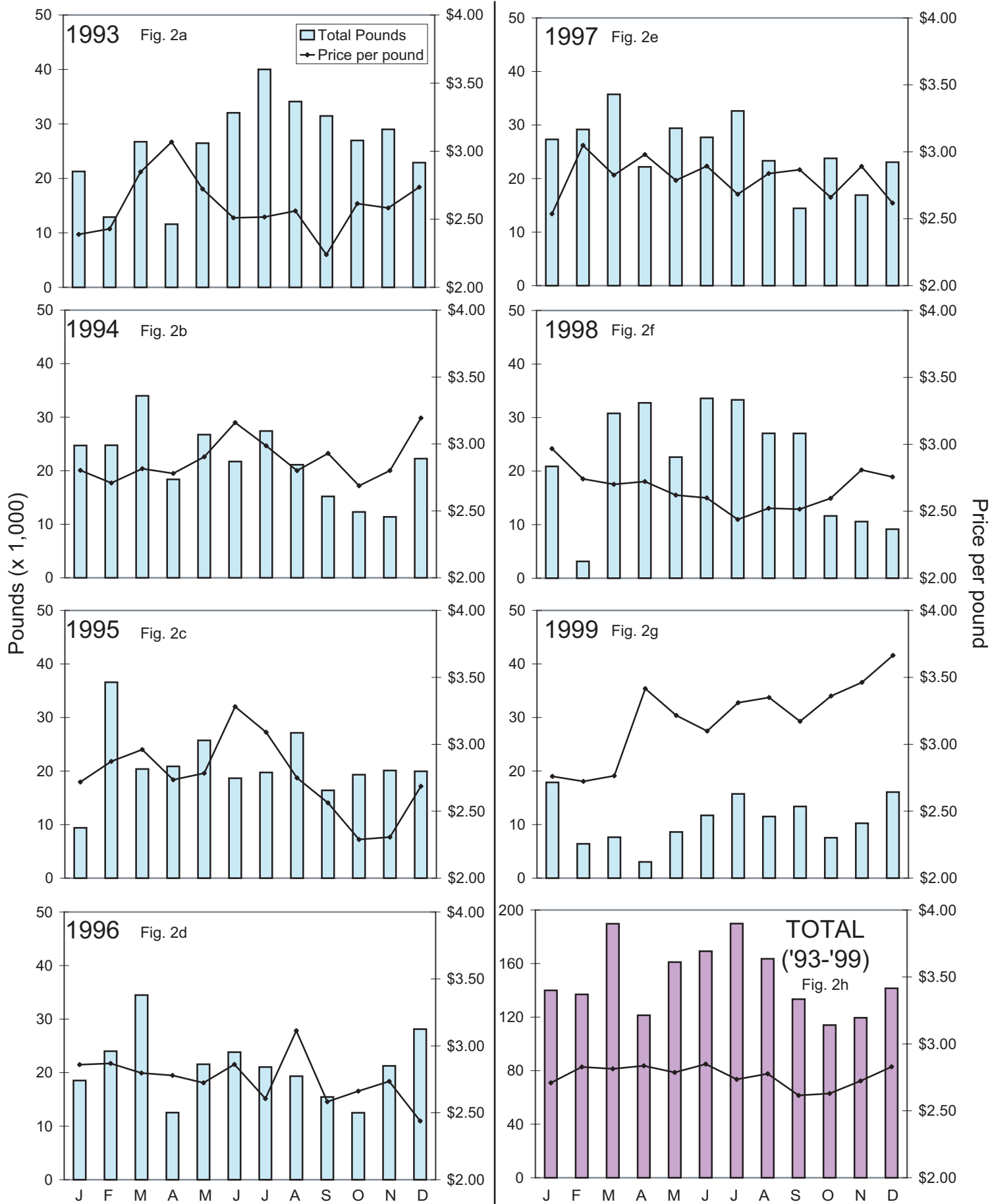


Table 2. (refer to fig. 2) Pacific Coast Fisheries Information Network Data (1993 - 1999)
Total Pounds of California Sheephead Caught and Average Price per Pound by Month

1993
Table 2a

Month	Total Pounds	Price per Pound
Jan	21,275	\$2.39
Feb	12,889	\$2.43
Mar	26,731	\$2.85
Apr	11,602	\$3.07
May	26,475	\$2.72
Jun	32,038	\$2.51
Jul	40,014	\$2.52
Aug	34,107	\$2.56
Sep	31,471	\$2.24
Oct	26,967	\$2.61
Nov	29,008	\$2.58
Dec	22,896	\$2.74
Total	315,473	\$2.58

1997
Table 2e

Month	Total Pounds	Price per Pound
Jan	27,305	\$2.54
Feb	29,178	\$3.05
Mar	35,735	\$2.83
Apr	22,188	\$2.98
May	29,405	\$2.79
Jun	27,699	\$2.89
Jul	32,632	\$2.68
Aug	23,316	\$2.84
Sep	14,435	\$2.87
Oct	23,780	\$2.66
Nov	16,917	\$2.89
Dec	23,054	\$2.62
Total	305,644	\$2.80

1994
Table 2b

Month	Total Pounds	Price per Pound
Jan	24,711	\$2.80
Feb	24,761	\$2.71
Mar	33,992	\$2.82
Apr	18,382	\$2.78
May	26,737	\$2.90
Jun	21,713	\$3.16
Jul	27,424	\$2.99
Aug	21,127	\$2.80
Sep	15,202	\$2.93
Oct	12,297	\$2.69
Nov	11,388	\$2.80
Dec	22,256	\$3.19
Total	259,990	\$2.89

1998
Table 2f

Month	Total Pounds	Price per Pound
Jan	20,869	\$2.97
Feb	3,127	\$2.74
Mar	30,785	\$2.70
Apr	32,753	\$2.72
May	22,605	\$2.62
Jun	33,576	\$2.60
Jul	33,303	\$2.44
Aug	27,048	\$2.52
Sep	27,035	\$2.52
Oct	11,626	\$2.60
Nov	10,565	\$2.81
Dec	9,161	\$2.76
Total	262,453	\$2.64

1995
Table 2c

Month	Total Pounds	Price per Pound
Jan	9,398	\$2.72
Feb	36,586	\$2.87
Mar	20,388	\$2.96
Apr	20,870	\$2.74
May	25,729	\$2.78
Jun	18,665	\$3.28
Jul	19,740	\$3.09
Aug	27,138	\$2.75
Sep	16,407	\$2.56
Oct	19,318	\$2.29
Nov	20,101	\$2.31
Dec	19,952	\$2.69
Total	254,292	\$2.76

1999
Table 2g

Month	Total Pounds	Price per Pound
Jan	17,881	\$2.76
Feb	6,413	\$2.72
Mar	7,642	\$2.76
Apr	3,019	\$3.42
May	8,622	\$3.22
Jun	11,719	\$3.10
Jul	15,723	\$3.31
Aug	11,499	\$3.35
Sep	13,382	\$3.17
Oct	7,547	\$3.36
Nov	10,246	\$3.46
Dec	16,074	\$3.66
Total	129,767	\$3.20

1996
Table 2d

Month	Total Pounds	Price per Pound
Jan	18,527	\$2.86
Feb	24,005	\$2.87
Mar	34,484	\$2.80
Apr	12,532	\$2.78
May	21,562	\$2.72
Jun	23,824	\$2.86
Jul	21,051	\$2.61
Aug	19,342	\$3.11
Sep	15,452	\$2.58
Oct	12,509	\$2.66
Nov	21,259	\$2.74
Dec	28,124	\$2.44
Total	252,671	\$2.75

TOTAL
'93 - '99
Table 2h

Month	Total Pounds	Price per Pound
Jan	139,966	\$2.71
Feb	136,959	\$2.83
Mar	189,757	\$2.81
Apr	121,346	\$2.84
May	161,135	\$2.79
Jun	169,234	\$2.85
Jul	189,887	\$2.73
Aug	163,577	\$2.78
Sep	133,384	\$2.62
Oct	114,044	\$2.63
Nov	119,484	\$2.72
Dec	141,517	\$2.83
Total	1,780,290	\$2.77

Figure 3.(refer to table 3) Commercial Passenger Fishing Vessel Data (1993 - 1998)
Total Number of California Sheephead Caught and Catch per 100 Angler Hours (CPUE)

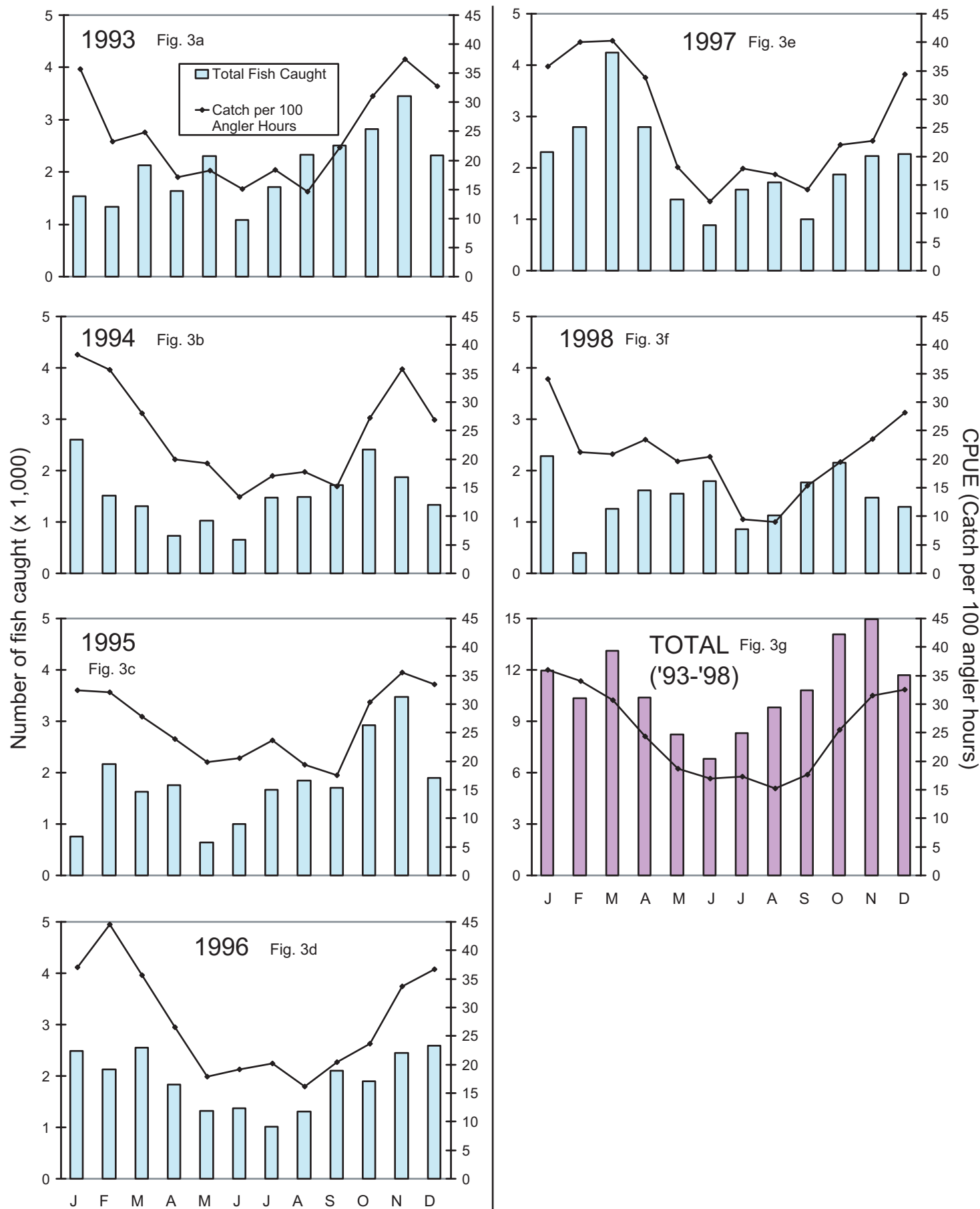


Table 3. (refer to fig. 3) Commercial Passenger Fishing Vessel Data (1993 - 1998)
Total Number of California Sheephead Caught and *Catch per 100 Angler Hours (CPUE)

1993
Table 3a

Month	No. Fish Caught	CPUE*
Jan	1,537	35.67
Feb	1,336	23.29
Mar	2,125	24.87
Apr	1,635	17.15
May	2,309	18.28
Jun	1,081	15.09
Jul	1,717	18.41
Aug	2,330	14.66
Sep	2,503	22.27
Oct	2,825	31.03
Nov	3,448	37.42
Dec	2,315	32.75
Total	25,161	22.92

1997
Table 3e

Month	No. Fish Caught	CPUE*
Jan	2,312	35.77
Feb	2,793	40.03
Mar	4,240	40.29
Apr	2,795	33.81
May	1,385	18.12
Jun	885	12.16
Jul	1,575	17.85
Aug	1,716	16.81
Sep	998	14.14
Oct	1,872	22.00
Nov	2,230	22.75
Dec	2,266	34.37
Total	25,067	25.54

1994
Table 3b

Month	No. Fish Caught	CPUE*
Jan	2,598	38.30
Feb	1,514	35.67
Mar	1,313	28.00
Apr	736	19.97
May	1,026	19.29
Jun	659	13.41
Jul	1,474	17.10
Aug	1,487	17.76
Sep	1,722	15.28
Oct	2,409	27.28
Nov	1,876	35.77
Dec	1,333	26.91
Total	18,147	23.59

1998
Table 3f

Month	No. Fish Caught	CPUE*
Jan	2,282	34.05
Feb	393	21.21
Mar	1,253	20.91
Apr	1,610	23.38
May	1,557	19.66
Jun	1,798	20.45
Jul	860	9.46
Aug	1,131	8.98
Sep	1,766	15.34
Oct	2,150	19.50
Nov	1,469	23.59
Dec	1,297	28.10
Total	17,566	18.84

1995
Table 3c

Month	No. Fish Caught	CPUE*
Jan	759	32.44
Feb	2,166	32.07
Mar	1,623	27.83
Apr	1,762	23.93
May	644	19.86
Jun	1,005	20.51
Jul	1,673	23.64
Aug	1,844	19.41
Sep	1,701	17.53
Oct	2,918	30.29
Nov	3,473	35.59
Dec	1,894	33.41
Total	21,462	26.25

TOTAL
'93 - '98
Table 3g

Month	No. Fish Caught	CPUE*
Jan	11,977	35.95
Feb	10,336	34.05
Mar	13,101	30.66
Apr	10,367	24.32
May	8,244	18.68
Jun	6,801	16.91
Jul	8,311	17.34
Aug	9,815	15.18
Sep	10,794	17.66
Oct	14,070	25.53
Nov	14,944	31.45
Dec	11,698	32.52
Total	130,458	23.91

1996
Table 3d

Month	No. Fish Caught	CPUE*
Jan	2,489	37.03
Feb	2,134	44.55
Mar	2,547	35.65
Apr	1,829	26.56
May	1,323	17.94
Jun	1,373	19.15
Jul	1,012	20.24
Aug	1,307	16.13
Sep	2,104	20.39
Oct	1,896	23.66
Nov	2,448	33.69
Dec	2,593	36.67
Total	23,055	26.85

Abbreviated Life History of the California Sheephead (*Semicossyphus pulcher*)

The California sheephead (sheephead) along with two other common southern California species, the rock wrasse (*Halichoeres semicinctus*), and the senorita (*Oxyjulis californica*) are members of the mostly tropical, worldwide wrasse family Labridae. The sheephead is easily distinguished from the others by its color pattern, greater body depth, and large size. Juvenile sheephead (less than 4 in. long) are orange with at least two white, horizontal stripes on the side and several black spots in the dorsal and anal fins. Adult males have a black head and tail, separated by a reddish middle section, while the females are uniformly pink or reddish. The males also have a prominent, fleshy bump on their foreheads.

Distribution, Stock Structure and Migration

California sheephead range from Monterey Bay, California, south into the Gulf of California. This species is not common north of Point Conception. Sheephead are found intertidally to about 280 ft. They are considered a resident, solitary species and no systematic movements have been described.

Age and Growth

Male sheephead have been aged at around 50 yr, and can achieve a length of 3 ft and a weight exceeding 36 pounds. Females have been aged to 30 years.

Reproduction, Fecundity and Seasonality

Sheephead are protogynous hermaphrodites, beginning life as females with older, larger females developing into secondary males. Female sexual maturity may occur in 3 to 6 yr and fishes may remain female for as long as 15 yr. The timing of the transformation to males involves the population sex ratio as well as the size of available males. Sheephead are sometimes seen in large schools, perhaps associated with spawning aggregations. Batch spawning occurs between July and September. Larval drift ranges from 34-78 days. Settlement size remains between 0.5 and 0.6 inches.

Natural Mortality

Estimates of natural mortality are not available.

Diseases

No information is available on diseases in sheephead.

Predator/Prey Relationships

Sheephead feed by crushing their prey items with their enlarged jaw teeth. They have a broad diet, which includes crabs, barnacles, mollusks, and sea urchins. Because of its large adult size, sheephead have few known predators. Giant sea bass, moray eels, and harbor seals have been documented as predators of sheephead.

Competition

Smaller sheephead may compete with garibaldi, *Hypsypops rubicundus*, when they forage for food.

Critical Habitat

Sheephead inhabit nearshore rocky reefs, kelp beds, and surfgrass beds. They seem to prefer areas of high and low relief, but have also been observed foraging over sandy bottom habitat. Sheephead are resident on many artificial reefs in southern California. At night they often utilize rock crevices and holes to sleep.

Status of Stocks

There has been no ongoing analysis of the status of the California sheephead. With the exception of 1982-1983, the population seems to increase during El Niño conditions and this is reflected in recruitment.